

Presenting a Model of Alexithymia with Academic Performance Mediated by College Adjustment and Traditional / Cyber Bullying in University Students

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ABSTRACT

Objective: The aim of the present study was to investigate the relationship between Alexithymia and academic performance mediated by college adjustment and traditional / cyber bullying in students.

Method: The research adopted a correlational design using structural equation modeling and the statistical population of the study included university students who were selected by convenience sampling method and responded to Patchin & Hinduja's (2011) Bullying scale, Bagby et al.'s Toronto Alexithymia Scale (1994), and Baker & Siryk's (1984) Adjustment to College Questionnaire. The students' final semester grade point average was used to measure the academic performance variable. The obtained data were analyzed by Pearson's correlation coefficient test and structural equations using SPSS 24 and Amos 23 software.

Results: The results showed that Alexithymia, college adjustment, and bullying have a direct effect on academic performance. Also, Alexithymia have an indirect effect on students' academic performance through the mediation of college adjustment and bullying. The research model was also confirmed and the results showed that the research model has a good fit for the variables and 49% of the variance in academic performance was explained by the research variables.

Conclusions: With regard to the findings of this study, it can be stated that the final research model has a good fit, and therefore, awareness of educational professionals such as professors and education specialists can prevent social and emotional harm and increase students' academic performance.

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Introduction

Academic performance refers to the assessment of individual progress, institutional effectiveness, and the overall quality of the educational process (Tharu, 2024), and is the extent to which a student or institution achieves its short-term or long-term educational goals and is measured by continuous assessment or grade point average (Hailu et al., 2024). Academic performance is one of the indicators of the success of educational systems in achieving their goals (Bordbar et al., 2025). Successful students are those who, in addition to having more effective and efficient learning techniques for acquiring and applying information, can evaluate and regulate their behavior by motivating themselves if they do not learn properly (Al-Abyadh et al., 2022). Students' academic performance is very important for students' evaluation at the university, and achieving success and progress at the university is a concern of educational authorities.

Several factors contribute to students' academic performance, one of which is Alexithymia. The transition from high school to university presents students with various psychological challenges, one of which is Alexithymia (Khan et al., 2025). Alexithymia refers to cognitive traits characterized by challenges in understanding, identifying, and expressing emotions (Amanullah et al., 2026). Alexithymia often refers to an inability to express emotions, difficulty recognizing and expressing one's own or others' emotions, and cognitive processing of emotions, which impairs socioemotional communication such as empathy and leads to impaired social functioning (Wingbermhle et al., 2012). Humans are skilled at distinguishing, regulating, and responding to their emotions, and at the core of all these functions is emotional awareness: conscious emotional states that play a central role in human psychological life. Impaired emotional awareness—a clinical construct commonly referred to as Alexithymia—is present across a wide range of disorders and can have a detrimental impact on functional outcomes and response to treatment (Hogeveen & Grafman, 2021). Alexithymia is an important variable associated with educational and academic problems. High levels of Alexithymia increase academic distress and Internet addiction, and reduce mental health (Cobzeanu et al., 2025).

Alexithymia prevents the understanding and use of verbal language to describe and regulate one's emotions and also affects the academic achievement of young people (Romano et al., 2019). Research results also show a positive relationship between Alexithymia and academic avoidance (Aziz rad & Tanha, 1404), a positive relationship with academic procrastination (Ayadi et al., 2019), and a positive relationship with academic performance (Zargarnetaj, 2021).

The next variable is college adjustment. One of the important psychological constructs for the success and persistence of students in the challenging period of the first year of university is adjustment (Chenari et al., 2024). University adjustment is a psychological process that new students go through in adapting to the new chapter of their early academic life (Zhuhra et al., 2022). Adapting to university is a major life transition that not everyone successfully navigates (Fernandez

et al., 2017). Students have to face various demands such as deciding on a future career, adapting to a new environment, building new relationships, being away from family, and experiencing different courses and teachers. These different demands may make this period one of the most stressful and make the adaptation process a difficult stage (MichaeliManee et al., 2024). According to Baker and Siryk (1984), adaptation to university includes academic adaptation (students' good coping with educational demands, such as motivation to complete academic requirements, academic effort, and satisfaction with the academic environment), social adaptation, (the student's success in coping with the interpersonal and social demands inherent in university life), personal adjustment (the student's psychological state and the degree to which they experience general psychological distress), and organizational commitment (the student's satisfaction with the university experience in general and the quality of the relationship between the student and the university).

College adjustment is one of the important factors of mental health and academic performance. Research has shown that college adjustment has a negative relationship with social loneliness and depression (MichaeliManee et al., 2024), a positive relationship between college adjustment and self-concept and academic achievement (Pouriarizi et al., 2018), a positive relationship with students' academic performance (Zargarnetaj, 2021), a positive relationship with academic flourishing (Ashkoti et al., 2021), and a positive relationship between college adjustment and academic performance (Homayouni et al., 2022).

Another important variable is bullying. Bullying is a major public health concern with negative consequences (Ariani et al., 2025), and is a major public health problem that increases the risk of adverse health, social, and educational outcomes in childhood and adolescence (Armitage, 2021). Bullying is repeated aggressive behavior that is intended to harm or intimidate another person and occurs in a variety of forms—physical, verbal, relational, and cyber. Traditional bullying involves physical or verbal aggression in face-to-face interactions, while cyberbullying uses electronic communication to inflict harm, often with anonymity, greater reach, and permanence (Ali & Pandey, 2025). As children enter school, friendships and interactions with peers take on a more important role in their lives. These relationships can contribute to a child's sense of well-being and social competence, but they are also associated with exposure to new forms of victimization. Although peer violence can take many forms, available data suggest that bullying by classmates is the most common (UNICEF, 2025). Bullying is a complex and widespread problem with profound psychological, social and legal consequences, and includes physical, verbal, relational, sexual and cyber forms that involve perpetrators, victims and bully-victims (Harsono & Febriyana, 2026).

Cyberbullying increases emotional exhaustion and loss of individuality, while significantly reducing the sense of learning efficacy and is an important contributing factor in academic burnout, which negatively affects academic performance and psychological well-being (Zhou et al., 2025).

Research has shown that traditional and cyberbullying have a positive relationship with test anxiety, with a greater effect of cyberbullying (Solas-Martinez et al., 2025), a negative relationship with academic performance (Al Saidi et al., 2025), and a negative relationship between traditional and cyberbullying with learning orientations (Solas-Martinez et al., 2025).

Bullying is an important and common problem that can have many psychological, behavioral, cognitive, physical, economic, social, and cultural consequences. Among them, the failure and ability to regulate emotions are considered influential factors in bullying behaviors (Shabahang et al., 2019). Alexithymia play an important role in committing cyberbullying and the occurrence of violent acts, and access to social media and its numerous applications has increased the likelihood of cyberbullying. The Internet and cyberspace have increasingly taken up a large part of people's daily lives and have become a part of their lives, and problems in identifying and describing feelings and emotions can lead to committing bullying acts (Maqsodolnejad & Homayuni, 2023).

Emotion regulation theory states that people who have difficulty expressing or understanding their emotions, such as those with high alexithymia scores, may turn to external stimuli such as using the Internet and cyberspace, and these behaviors may affect not only emotional regulation but also all areas of personality development such as family functioning, academic performance, and social relationships (Amanullah et al., 2026; Gioia et al., 2021). Therefore, considering the above, the present study intended to investigate whether Alexithymia has an effect on academic performance through the mediation of college adjustment and traditional/cyberbullying in students.

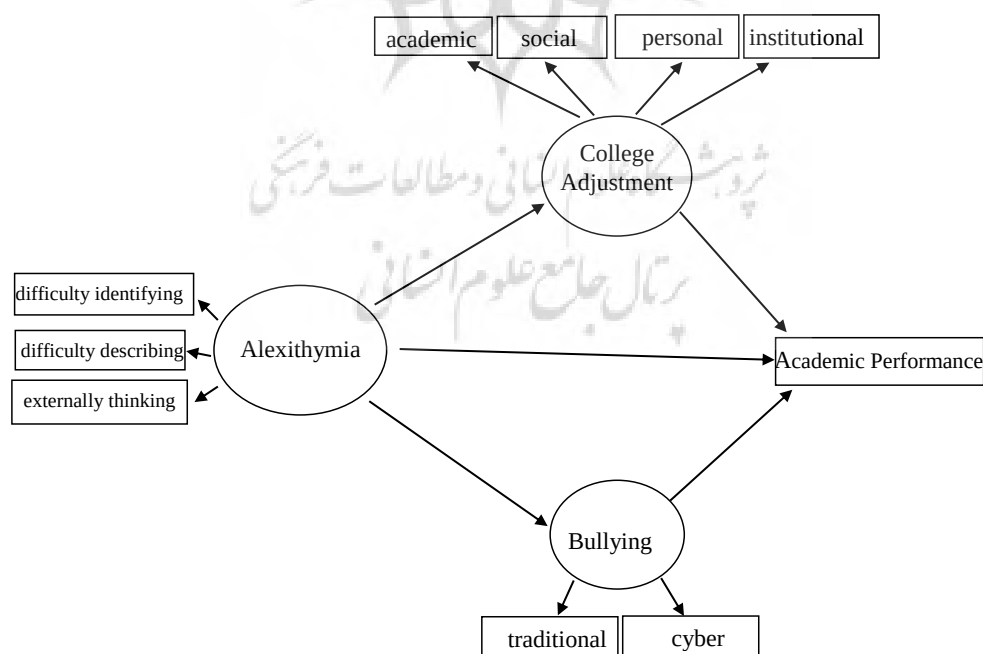


Figure 1. Conceptual research model

Method

Design

This research, considering its purpose, was an applied research adopting a correlational research design based on the structural equation method.

Participants

The statistical population of this research consisted of all university students. In the field of estimating the optimal volume for structural equation studies, Klein (2010), and Löhlin (2004) quoted by Ghasemi (2011) believe that a sample size of less than 100 is inappropriate and higher than 200 is desirable. Also, to be compatible with the structural equation model, the number of samples should be 5 to 25 times the observed or apparent variables (Stevens, 1994, quoted by Hooman, 2014). Therefore, in this study, to determine the sample size, considering the number of obvious variables (10 obvious variables and assigning a coefficient of 25 to each variable) and taking into account the possibility of incomplete questionnaires, 300 people were selected as the sample size using the convenience sampling method and responded to the research questionnaires.

Bullying Scale: This questionnaire was developed by Patchin & Hinduja (2011) by adapting the Bullying or Victim Questionnaire with 15 items and two subscales of Traditional Bullying and Cyber Bullying. The Cronbach's alpha coefficient was reported by the developers to be .88 and .76 for traditional and cyberbullying, respectively, indicating good internal consistency of the test. In the study by Bayrami et al. (2012), Cronbach's alpha for general traditional and cyberbullying and the total score was .71, .75, and .81, and in the study by Sabet & Khayatan (2013), it was .70, .84, and .71. In the present study, the confirmatory validity of the questionnaire was examined and approved, and the reliability of the scale was calculated using a Cronbach's alpha coefficient of .68.

Toronto Alexithymia Scale: The Toronto Alexithymia Scale was developed by Bagby et al. (1994) with 20 items and three subscales: difficulty identifying feelings, difficulty in describing feelings, and externally oriented thinking. The validity of the Alexithymia Scale was confirmed by its creators. Its reliability was also obtained using Cronbach's alpha coefficient by Bagby et al. (1994) of .87. In Besharat's (2007) study of the Persian version of the Toronto Alexithymia Scale, Cronbach's alpha coefficients for total Alexithymia, and three subscales: difficulty in identifying emotions, difficulty in describing emotions, and objective thinking were .85, .82, .75, and .72, respectively, and the correlation coefficient of this test with emotional intelligence was calculated as -.80, psychological well-being as -.78, and psychological helplessness as .44. Also, in the study by Aghajanzadeh Goodarzi et al. (2025), the reliability using Cronbach's alpha method was .67, .70, .66, and .78, respectively. In the present study, the confirmatory validity of the questionnaire

was examined and approved, and the reliability of the scale was calculated using Cronbach's alpha coefficient of .84.

Adjustment to College Questionnaire: The questionnaire was developed by Baker and Siryk in 1984. This questionnaire contains 65 items to measure students' adjustment in four subscales of academic adjustment, social adjustment, personal adjustment, and institutional attachment. The reliability of the Persian version of this questionnaire with Cronbach's alpha for academic adjustment, social adjustment, personal adjustment, and institutional and total scores was .84, .72, .69, .90, and .78, respectively (MichaeliManee nee, 2016), and the relationship of this questionnaire with depression was -.62 and -.68 with social loneliness (MichaeliManee et al., 2024). In the present study, the confirmatory validity of the questionnaire was examined and approved, and the reliability of the scale was calculated using Cronbach's alpha coefficient to be .94.

Academic Performance: The students' end-of-semester grade point average was used to measure their academic performance.

Findings

Table 1. Correlation matrix of the variables of Alexithymia, college adjustment, and traditional/cyberbullying with academic performance

variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
difficulty in identifying feelings	15.80	3.60	1											
difficulty in discribing feelings	13.35	3.61	.90**	1										
externally thinking	24.97	7.15	.57**	.55**	1									
Alexithymia	54.17	12.94	.79**	.77**	.90**	1								
academic adjustment	60.42	8.04	-.26**	-.26**	-.28**	-.29**	1							
social adjustment	49.57	8.16	-.20**	-.21**	-.22**	-.23**	.56**	1						
personal adjustment	35.05	8.35	-.17**	-.17**	-.21**	-.22**	.43**	.61**	1					
institutional attachment	16.74	3.91	-.15**	-.15**	-.17**	-.16**	.56**	.80**	.59**	1				
College adjustment	161.78	23.70	-.24**	-.25**	-.27**	-.28**	.78**	.88**	.80**	.85**	1			
traditional	16.11	3.64	.48**	.45**	.35**	.46**	-.35**	-.24**	-.23**	-.21**	-.32**	1		
cyber	5.48	1.22	.56**	.55**	.42**	.55**	-.28**	-.28**	-.23**	-.22**	-.31**	.80**	1	
bullying	21.59	4.84	.52**	.49**	.39**	.50**	-.34**	-.26**	-.24**	-.22**	-.33**	.90**	.88**	1
Academic performance	15.61	1.27	-.23**	-.21**	-.21**	-.24**	.41**	.41**	.38**	.48**	.49**	-.23**	-.22**	-.24**

** significant at .01 level

The results in Table 1 show a significant positive correlation between the college adjustment variable and academic performance, and a significant negative correlation between the Alexithymia and bullying variables with academic performance in the participants. To examine the assumption of normality of the data, first the Kolmogorov-Smirnov test was performed along with the skewness and kurtosis coefficients, which showed the presence of a significant deviation from the normal distribution. To identify multivariate outliers, the Mahalanobis distance was used at a confidence level of .99 (critical value of chi-square with degrees of freedom equal to the number of variables). As a result, 11 outliers (equivalent to 3.6%) were removed from the data. Subsequently, the aforementioned tests were re-run on the remaining 289 samples, and the results showed that the data were in a normal state, and the assumption of normality was established for subsequent analyses. Also, in examining the collinearity of the data, the tolerance of variance and variance inflation were at normal levels.

Table 2. Fit indices resulting from data and variable analysis after one correction step

Fix Index	DF	(χ^2/DF)	CFI	IFI	RMSEA	NFI	GFI
Accepted domain	296	1-5	> .9	> .9	.1>	> .9	> .9
observed value		2.942	.996	.997	.038	.999	.995

The RMSEA value is .038, so this value is less than .1, which indicates that the mean squared errors of the model are appropriate and the model is acceptable. Also, the value of the chi-square with degrees of freedom (2.942) is between 1 and 3, and the GFI, CFI and NFI indices are almost equal and greater than .9, which indicate that the model for measuring the research variables is appropriate.

Table 3. Direct estimation of the model by the maximum likelihood (ML) method

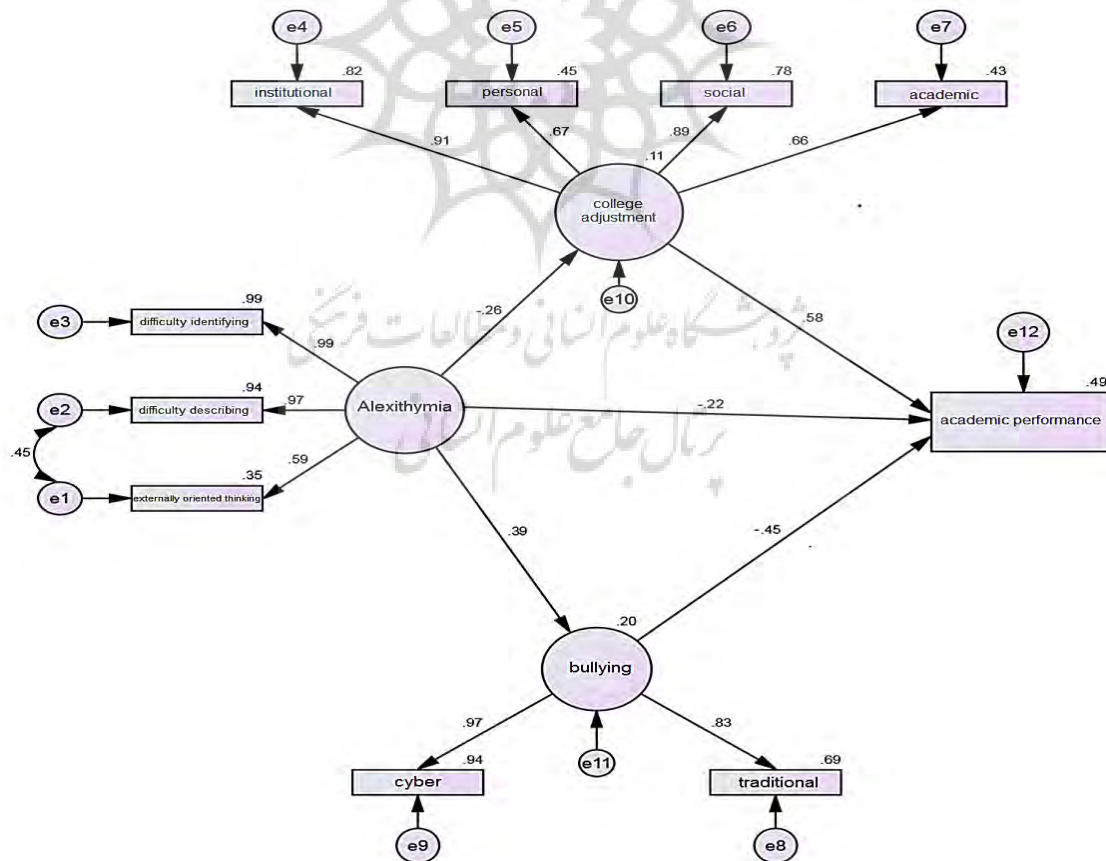
variable	b	β	R ²	t	p
Alexithymia on Academic Performance	-.296	-.223	.066	2.977	.001
College Adjustment on Academic Performance	.440	.317	.139	3.809	.001
Bullying on Academic Performance	-.273	-.205	.055	2.896	.001

According to Table 3, based on standardized coefficients (β), college adjustment with a value of .317 has the most positive effect on academic performance, meaning that increasing college adjustment improves academic performance. In contrast, Alexithymia with a value of -.223 and bullying with a value of -.205 have a negative and moderate effect. The R² value shows that the variables college adjustment, Alexithymia, and bullying explain 13.9%, 6.6%, and 5.5% of the variance in academic performance, respectively, and all three paths are statistically significant at the $P > .01$ level.

Table 4. Indirect estimation of the model using the bootstrap method

variable	β	R^2	min	max	sig
Alexithymia on Academic Performance through the Mediation of Bullying	-.457	.294	-.586	-.334	.001
Alexithymia on Academic Performance through the Mediation of College Adjustment	.582	.372	.462	.637	.001

Table 4 shows the results of two indirect path analysis models in which the indirect effect of Alexithymia on academic performance was investigated through two mediating variables of bullying and college adjustment. In the first indirect path, Alexithymia has a negative and significant effect on academic performance (-.457) through the mediating role of bullying. Considering the confidence interval (-.586 to -.334) that does not include zero, this effect is significant at the .01 level. The value of $R^2 = .294$ indicates that this model explains 29.4% of the variance in academic performance. In the second indirect path, Alexithymia has a positive and significant effect on academic performance (.582) through the mediating role of college adjustment. The confidence interval (.462 to .637) also confirms the significance of this effect. This model has $R^2 = .372$ and explains about 37.2% of the variance.

**Figure 1. Final tested model with standardized prediction statistics**

Discussion

The aim of the present study was to investigate the causal model of Alexithymia with academic performance mediated by college adjustment and traditional /cyber bullying in students. The results showed that Alexithymia, college adjustment, and bullying have a direct effect on academic performance. Also, the effect of indirect paths of Alexithymia on academic performance mediated by college adjustment and bullying was confirmed, which shows that 49% of the variance of the endogenous variable can be explained by the research variables. The findings of the study are consistent with the results of Aziz Rad and Tanha (2025), Ashkooti et al. (2021), Homayouni et al. (2022), MichaeliManee et al. (2024), Khan et al. (2025), Ali and Pandey (2025), Zhou et al. (2025), Solas-Martinez et al. (2025).

In explaining the findings, it can be stated that academic performance is one of the important indicators in evaluating higher education and all efforts of this system are to implement this (Hashemiabadi et al., 2013). Academic performance should be considered from the pre-university period. Because this period lays the foundation for their future success in higher education and other fields. In higher education, entry into universities and colleges requires a high level of academic performance in pre-university programs. Furthermore, students are expected to be academically well-prepared, as university courses are likely to be more difficult and challenging than high school courses. When they can ensure that they can cope with pre-university learning, i.e., by ensuring good academic performance, they are in a better position to succeed in university-level courses (Al-Zubaidi et al., 2024). Furthermore, academic success among students is explained by referring to the management of learning activities carried out by students and aspects related to the dimension of learning flexibility in the academic environment, with positive consequences on it. Academic success is also explained by considering academic standards and achieving these standards as a criterion for evaluation. Student satisfaction with their academic performance can encompass academic success. From an academic perspective, high academic performance, which is objectively measured, is a characteristic of academic success (Angel, 2023).

Academic performance is a key indicator of an individual's skills, abilities, and potential, and psychological disorders such as depression, anxiety, and stress are negatively associated with students' academic performance (Majudmir et al., 2026). Upon entering college, students must not only build new relationships, but also change their existing relationships with friends and family, and learn new study habits for a college environment that typically involves more independence than what was experienced in high school (Ross et al., 1999, cited in Parker et al., 2005). Alexithymia are one of the important variables in the field of mental health and academic success. This problem prevents the understanding and acceptance of verbal language to describe and regulate one's emotions and also affects academic achievement (Romano et al., 2019). Alexithymia play an important role in reducing self-efficacy in students, and high Alexithymia in students affect

self-regulation, goal orientation, and academic performance, making assessment by behavioral specialists necessary in universities (Faramarzi & Khafrey, 2017).

Bullying is a major public health concern worldwide, with detrimental consequences, particularly in academic settings. Findings highlight the need for a variety of policies to be implemented in universities to effectively address and reduce bullying incidents (Raffi et al., 2025). The consequences of bullying can be categorized into several categories: educational consequences in childhood, health consequences in childhood, and consequences in adulthood. Most victims of cyberbullying are also victims of traditional bullying. In general, the adverse mental health outcomes of childhood bullying have the greatest impact on victims of bullying, and therefore preventing bullying is critical to achieving the sustainable development goals (Armitage, 2021). Tackling bullying requires collaboration between educational institutions, parents, and healthcare professionals, and educational programs focused on prevention and targeted interventions for all groups are essential to reduce the long-term mental health consequences of bullying (Ariani et al., 2025).

Conclusion

Bullying in academic settings is an important yet understudied contributor to mental health problems. Differentiating between sources of victimization may reveal distinct risk profiles related to mental health and substance use outcomes (Martinez et al., 2026). Bullying behavior has a significant and negative impact on mental health and academic performance, and in many countries around the world, being a victim of bullying is a major concern for parents and school administrators. Bullying can take many forms, including verbal (threatening, insulting), physical (hitting, pushing), social, and cyberbullying. In general, victims of bullying have difficulty defending themselves, which indicates an imbalance of physical or emotional power. Victims of bullying are exposed to repeated and negative peer interactions over a long period of time, which can harm their mental health. The study also showed that bullying is a serious social phenomenon and has diverse and significant effects on the mental health and academic performance of university students, and the university should take serious measures to reduce the phenomenon of bullying (Nadim & Osman, 2022).

In conclusion, it can be stated that increasing academic performance is one of the major goals of any educational system and at any level of education. Thus, identifying inefficient factors that affect this process helps educational officials design programs to reduce negative factors so that by reducing these undesirable factors, students' academic performance, and consequently, their academic success and mental and academic health can increase. Among the limitations of the study were the use of students' end-of-semester GPA as a variable of academic performance and the lack of control over education level, and in addition, the process of attracting students' cooperation to

participate in the study made the sampling process take longer. It is also suggested that this study be conducted in different cultures, in different genders, and among native and non-native students.

Conflict of interest

There are no conflicts of interest.

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